

DOE/ARRA Multi-family Unit Dwellings (MUDs)

Presented by
ACCES
For
Community Services and Development
July 27, 2011

DOE/ARRA Multi-Family Weatherization

- **Introduction:**

- * DOE and HUD have agreed to simplify the protocol for weatherizing Multi-Family Unit Dwellings (MUDs).
- * DOE has provided guidance that all states need to include MUDs in their mix of weatherized units as a majority of renters are income qualified for DOE WAP.
- * CSD has contracted with RHA to develop a Large MF Energy Audit Protocol.
- * CSD has also contracted with ACCES to create a “Toolkit” for agencies to use when weatherizing MUDs.
- * CSD recently issued an RFP to identify a pool of TREAT and REM/Design auditors.

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- **Why should agencies try this new protocol?**
- When using the CSD 43-MFP for HUD-DOE list-qualified properties the intake process is reduced and weatherization can begin sooner
- The TREAT Audit can identify more measures that qualify for weatherization installation increasing per unit cost
- Some larger measures can significantly increase energy savings
- More energy savings will allow affordable housing properties to pass along the benefits to tenants – This helps to maintain affordable housing
- Increasing ARRA expenditures will reduce the risk that the State of California will need to return funds to the federal government

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- **Why the TREAT audit?**

- *Identification of building energy usage
- *Building profile, configuration, and existing energy systems.
- *Relevant health and safety checks and conditions.
- *Current energy and hot water consumption profile.
- *The proposed scope of work that clearly defines the measures and related costs being applied for funding.
- *Any relevant supplemental funding sources and owners contributions.
- *The calculated savings investment ratio of each measure including interactive effects of higher SIR measures.
- *The total calculated reduction in energy or water usage for the recommended measures.
- *The total package of measures SIR calculation.
- *The energy modeling software file and assumptions used to make the projections.
- *The methodology of data collection and relevant calculations.
- *A representation that the Audit meets CSD's DOE WAP criteria, and audit protocol as defined herein.

TREAT is DOE Approved

- TREAT is DOE approved for weatherization in all buildings.
- Specific language from DOE with regard to energy auditing software can be found in Weatherization Program Notice 11-08.
- <http://www.psdconsulting.com/software/treat>

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- **How do we identify qualified buildings?**

*The HUD list: http://www1.eere.energy.gov/wip/multifamily_guidance.html

*ACCES list: All HUD lists will be broken down into counties

We are working on this list, DOE has 6-7 lists to filter

We will include this in the agency “Toolkit”

*Management companies: Your contacts from WX

*ACCES may identify buildings in your area and refer them directly to your agency

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- **What types of buildings work best with TREAT audit?**
- Prior to initializing a TREAT audit, the agency should verify that a building qualifies for a TREAT audit. All buildings with twenty-five (25) or more units qualify for a multifamily audit using TREAT. TREAT may also be used for buildings with 5-24 units provided that the building has shared centralized heating, cooling or hot water heating. REM/Design is appropriate for buildings of 5–24 units when the units are individually heated and cooled.
- Virtually any building type can work with a TREAT audit as long as the systems are centralized and the building and/or mechanical systems use older, less efficient technology. A general rule of thumb is to concentrate on the older buildings that have not been updated first. The following measures commonly apply to the building types indicated below.

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(1) All Building Types

- Outdated Lighting Technology
 - Replace Incandescent lighting
 - Replace older fluorescent (T12, Magnetic ballast) with newer fluorescent (T8, electronic ballast)
 - Replace inefficient outdoor lighting with fluorescent or LED or other.
- Common area lighting controls not present
 - Add occ. sensors in common areas (bathrooms, parking garages etc.)
- Older continuously running motors
 - Install controls on continuous hot water recirculation pumps
 - Install controls on continuous run ventilation fans
 - Install high efficiency motors when applicable
- Old HVAC controllers
 - Replace older thermostats with programmable ones
- Hot Water Conservation
 - Install low flow fixtures in showers and sinks.
- Older Mechanical Equipment
 - Any older heating system that does not use natural gas as primary heating fuel should be reviewed.
 - Any older water heating system that does not use natural gas as primary heating fuel should be reviewed.

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(2) Low/medium Rise apt with common HVAC and water heating

- Windows may be cost effective in more extreme climates when existing single pane windows are easily accessible.
- Attic insulation may be cost effective in more extreme climates
- Older HVAC systems present
 - TRV's (Thermostatic Radiator Valves) often need replacement on centralized steam heating systems
 - Outdoor reset controls added to existing system
 - Installation of modulating burner when not present
- Older central domestic water boiler present
 - Upgrade to condensing boiler

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(3) High Rise Apartment with Centralized Systems

- Older HVAC systems present
 - TRV's often need replacement on centralized steam heating systems
 - Outdoor reset controls added to existing system
 - Installation of modulating burner when not present
- Older central domestic water boiler present
 - Upgrade to condensing boiler
- Domestic booster pumps present
 - Replace with Variable Frequency Drives (VFD) booster pump and controller
- Increasing efficacy of ventilation systems

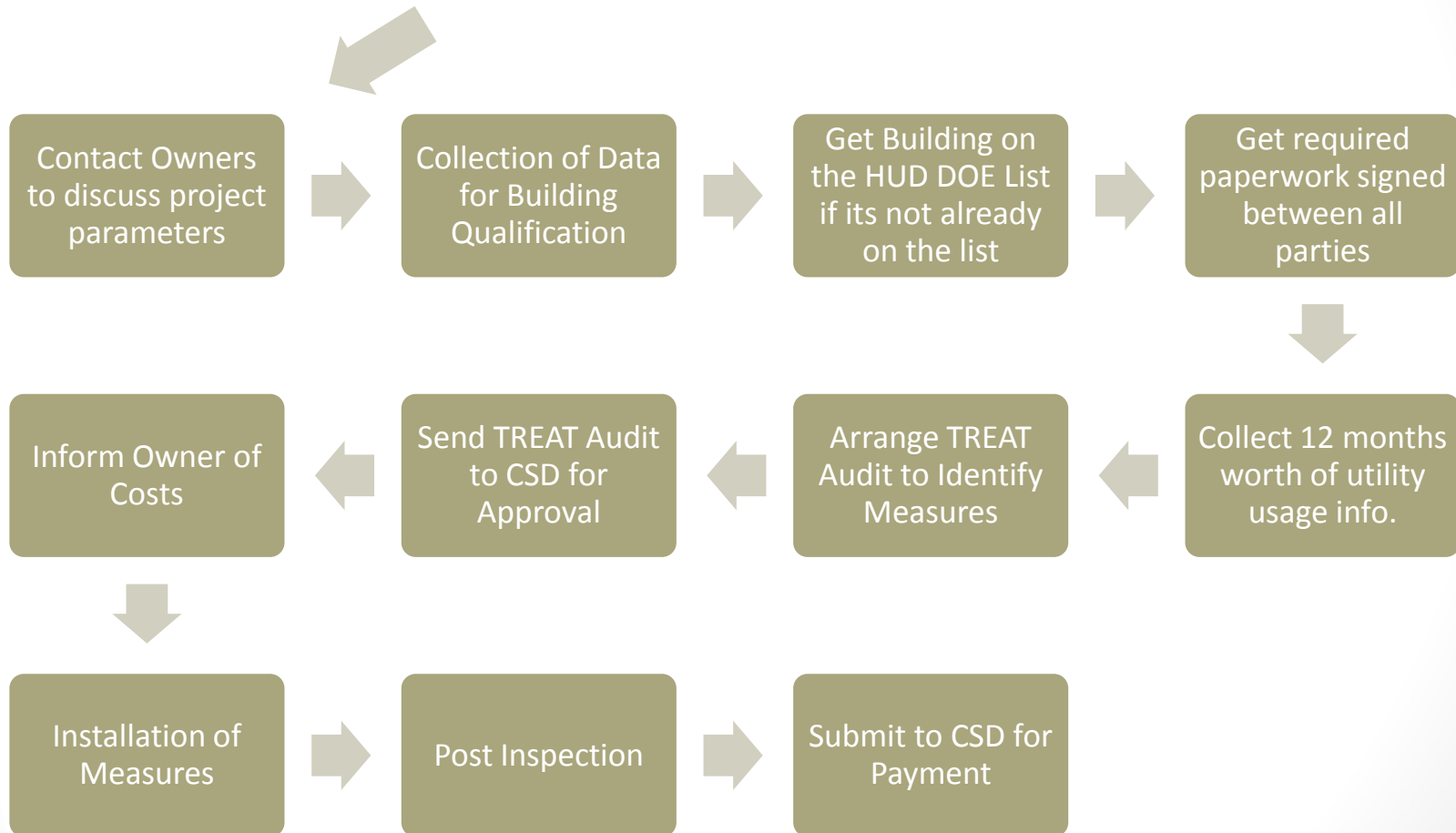
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- **What types of measures have typically been identified in audits submitted so far?**
- The common measures that we have been seeing are as follows
 - High efficiency domestic water heater boilers
 - Lighting retrofits and lighting controls
 - Low flow aerators and low flow showerheads
 - Pipe insulation and water heater blankets
 - Domestic Hot Water (DHW) recirculation controls
 - Air sealing
 - Insulation
 - Programmable thermostats
 - High efficiency motor retrofit

Multi-family Energy Audit Synopsis

Audit ID	Building Description	No. of Units	Recommended Measures	Cost of Measure Package	Cost Per Unit	Annual Savings	Annual Energy Savings per Unit
1	3 Story multi-family built in 1987 , in-unit baseboard electric resistance heat, central natural gas water heater	25	Timers on Rooftop Exhaust Fans, Programmable thermostats on common areas and in-unit electric heaters	\$6,279	\$251	\$2,300	\$92
2	177 Unit Multifamily built in 1919, common gas heat (low pressure steam) and domestic water heating	177	Condensing Domestic Water Heater Occupancy sensors in common areas	\$18,109	\$102	\$2,760	\$16
3	35 Unit Low Rise Multifamily building built in 1994, central DHW, central and individual heat	35	DHW Storage Insulation Comprehensive Air Sealing Hot Water Pipe Insulation Exterior Lighting Retrofit Attic Insulation DHW Recirc Control Thermostatic Boiler Control	\$18,884	\$540	\$2,976	\$85
4	105 Unit Multifamily built in 1915 (efficiency and one bedroom units), common hydronic heat and DWH	105	High Efficiency Central Water Heater Exit Light Replacement Kitchen Lighting Retrofit Exterior Lighting Retrofit	\$17,090	\$163	\$4,839	\$46
5	5 story Senior Living Community with 72 apartments, built in 1908	72	Timers on Rooftop Exhaust Fans Lighting Retrofits Install Low Flow Showerheads Replace DHW boiler with condensing boiler Weather-stripping	\$40,833	\$567	\$11,417	\$159
6	7 Story multi-family built in 1930 with common mechanical systems	55	Installation of Low Flow Fixtures Outdoor Lighting Retrofit Insulation of heating pipes Insulation of DHW pipes Common Area Lighting Retrofit Install High Efficiency Boiler Install Vending Miser Tune heating system/add outdoor reset Install TRV air vents in units	\$110,014	\$2,000	\$12,909	\$235
7	7 Story multi-family built in 1921 with common mechanical systems	41	Installation of Low Flow Fixtures Install condensing DWH boiler Insulate heat distribution piping Insulate DHW pipes	\$20,042	\$489	\$4,909	\$120
8	4 Story multi-family built in 1912 with common mechanical systems	76	Install Timers on Fans Replace Domestic Water Boiler with Condensing	\$15,520	\$204	\$2,683	\$35

Identify Potential MUD Projects



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- **What will agencies need to do?**

- *Identify buildings

- *Qualify buildings as appropriate for TREAT audit

- Type of building

- HUD listed?

- *Contact owner

- Explain the program

- Sign MUD Service Agreement or agency equivalent

- Fill out CSD 43-MFP form (Tenant Information/qualification)

- *Identify TREAT auditor

- Bid out to CSD qualified auditors

- Have Audit performed

- *Negotiate with owner on measures

- *Perform weatherization work; oversee all work

- Agency performs all measures

- Subcontracts some measures

- Subcontracts to owner

- *Inspections

- *Report and bill job

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- **What information will the auditor need from the agency?**
- It is beneficial if the agency can provide the basic building data up front such as building size, occupancy, common complaints, known issues and existing system types and 1 year worth of fuel billing data.
- **How long do the Audits Take?**
- A typical audit can take anywhere from 1-2 days on-site and costs \$8,000-\$15,000. After the on-site portion of the audit is complete, reports can usually be provided to the agencies within 2-4 weeks depending on the auditors work load.

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- **What data will we need to collect?**
- One year of electric / gas bills to provide usage data
- Permits
- Inspections
- Forms
 - Landlord agreement: Sample draft in the “Toolkit”
 - HUD application: In the “Toolkit”
 - CSD 43-MFP: In the “Toolkit”
 - CSD 75: In the “Toolkit”

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- **What is CSD's Role?**
- Provide ACCES and RHA for T&TA and support
- Provide a pool of eligible TREAT Auditors and a format for expedited procurement.
- Clarify DOE guidance as needed.
- Facilitate / Track TREAT Energy Audits.

RFI Solicitation – TREAT Auditors

- CSD issued an RFI (Request for Interest) on June 28, 2011 to identify a pool of energy auditors that are versed in TREAT energy audits.
- RFI closed on 7/22/2011 – Deadline for responses was extended one (1) week to allow for further outreach.
- Panel of CSD Energy and Environmental Services staff will review the responses and post a pool of qualified TREAT energy auditors by August 8, 2011 along with directions for bidding through the Pool.

RFI Solicitation – TREAT Auditors

- Qualified auditors will be assigned to two potential Pools:
 - Tier 2:
 - Must have a minimum of three (3) years of MUD energy audit experience;
 - Possess a current TREAT (Targeted Retrofit Energy Analysis Tool) software license;
 - Have at least one (1) year of experience using TREAT;
 - Have experience in building assessment (safety standards, CA state and local building codes, Title 24, etc.);
 - Experience in diagnostic testing, CAS, feasibility analysis for energy efficient building improvements, construction cost estimating and financial analysis .
 - Tier 1: Must meet all of the above qualifications, and:
 - Hold a software license and have experience with REM/Design;
 - Have experience conducting energy audits for residential buildings in low-income communities;
 - Experience conducting energy audits for local, state, non-profit agencies; and/or housing and energy efficiency programs.

DOE/ARRA MULTI-FAMILY WEATHERIZATION

Reminder:

DOE's 66% and 50% Eligibility Requirement

- DOE Weatherization Program Notice 11-4 (December 2010)
- DOE Weatherization Program Notice 11-1 (December 2010)
- CSD Broadcast Bulletin B 11-03 (May 23, 2011)

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DOE WPN 11-4:

Prioritizing Weatherization Work Based on Housing Type

Major Points:

- Program Goal – Increase energy efficiency for dwellings owned or occupied by low-income persons (all housing types).
- Prioritizes vulnerable populations
 - Elderly
 - People with disabilities
 - Families with children
 - High residential energy users and households with a high energy burden
- Rental Housing Focus – majority of renters are income qualified for DOE WAP.
- Large multi-family buildings are often high energy users.

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DOE WPN 11-4:

Prioritizing Weatherization Work Based on Housing Type

Reminder Issued:

- Multi-family buildings are eligible only where not less than 66 percent (50 percent for duplexes and four-unit buildings) of the units in the building are income qualified under WAP eligibility guidelines.
- Vacant units are considered eligible if they will be occupied by an income-qualified household within 180 days.
- Weatherizing only single units within a multi-family building does not meet DOE's program requirements.
- Recommends energy audit approach to weatherizing multi-family buildings.
- Streamlined approach to income qualification available for properties that appear on HUD lists posted to DOE's website.

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DOE WPN 11-1:

Program Year 2011 Weatherization Grant Guidance

Section 5.2 Multi-Family eligibility:

- Reflects much of what appears in DOE WPN 11-4.
- Total investment possible in the building is determined by multiplying the number of qualified units by the program's allowable cost / unit (Currently \$6,500) See next slide for a calculation
- Strongly notes that entire building must meet the 66% threshold (50% for 2 – 4 units) and that weatherizing only single units within a multi-family building would not meet program requirements.
- Weatherization work can result in improvements to all units in the building, even those not income-eligible. All units should be reported to DOE.

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How many dollars can be spent on a MUD?

The maximum funds available for any project is \$6,500 per qualified unit.

So if in a 100 unit building only 66% qualified:

$$66 \text{ units} \times \$6,500 = \$429,000 \text{ maximum}$$

If 100 units qualified then:

$$100 \text{ units} \times \$6,500 = \$650,000 \text{ maximum}$$

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Wrap-Up:

- Per Broadcast Bulletin 11-03, a whole-building approach to multi-family weatherization is required starting July 1, 2011.
- Weatherizing individual units within multi-family buildings will not be allowable under the DOE program.
- Agencies should use either the Intake Date, Assessment Date or the date from any other form of agency documentation that confirms when the commitment to provide weatherization services was originally offered to the qualifying household(s). Commitment dates on or after 7/1/2011 will require the building to be weatherized under the whole building approach.

Q&A

- If the agency subcontracts certain measures, such as boilers or a large HVAC system to the owner, would a three (3) bid process of procurement be acceptable from the owner?
 - **There are two issues in play here:**
 - 1. The agency itself must conduct a proper procurement process for any subcontracted services or measures, and this process must include a cost analysis (bid evaluation).**
 - 2. If the owner is the winning subcontractor and wishes to turn around and “sub out” the components of the work, it would be free to do so – within the cost limitations of its own subcontract with the agency.**
 - **It is important to note that the agency is responsible for the conduct of any subcontractors and must ensure that all funds disbursed are expended for allowable purposes.**

Q&A

- Could this be a sole source procurement if the agency contracts with the owner to do the work?
 - **Probably not. It is unlikely that the agency's contract with the owner would meet, and CSD would approve, a sole-source or non-competitive bid procurement.**
 - **Non-competitive bidding (NCB) is allowed under certain circumstances including the following:**
 - a) **The item or service is available only from a single source;**
 - b) **A public emergency exists (i.e. imminent threat to public safety, etc.) and it does not allow time for competitive bidding;**
 - c) **CSD authorizes the NCB proposal in advance;**
 - d) **After solicitation of numerous sources competition is deemed inadequate.**
- Please Note: A sole source or NCB procurement must include a cost analysis to ensure proposed costs are reasonable.

Q&A

- Would the agency be able to do a three bid process with advertising to cover for procurement?
 - **Any procurements conducted by the agency must meet the contractual and OMB / federal regulatory requirements.**
 - **Advertising is one component of the process.**
 - **All procurements must include a cost analysis component, even when a NCB contract is justified.**
 - **If the agency issues an RFP, it must include a cost / price component so that the agency is able to evaluate this factor in its analysis and selection of the subcontractor.**

Q&A

- Will these buildings need SHPO reviews on a unit by unit basis, or can they be reviewed as a whole building?
 - **This depends on the property size and the proposed measures. CSD will be updating the HPO website to allow for entry of certain large, multi-family buildings on a single screen (PDS). If proposed measures do not involve changes to windows, doors or window glass (or any external elements), then the HPO system will be able to provide a quick turnaround on historic reviews.**
- Would it be advisable to only do work on newer buildings? (Those under 45 years)
 - **While you can avoid a SHPO review if your agency weatherizes only buildings less than 45 years old, you may also missing out on large WAP expenditure opportunities. Boilers, centralized HVAC systems and other exempt measures can help to raise the expenditure per unit number for your agency.**
- How long will a SHPO approval take?
 - **This depends on the type of measures being installed. If measures are exempt from formal SHPO review, then the approval will be instantaneous. If proposed measures include alterations to windows, doors or window glass, then the review can take several weeks to complete.**
- Turn around time for TREAT audit approval?
 - **Once an audit is prepared and submitted for review to CSD it typically takes 5 days for review. Some audits require fixes / edits, so there can be some back and forth on measure calculations over the course of several weeks.**

Q&A

- Who do we send the audit to?
 - **Completed audits should be submitted to the following email address: Treat@csd.ca.gov**
- Can SIR (Savings Investment Ratio) be bought down?
 - **Yes.**
- Are owner contributions acceptable?
 - **Yes. Owners can provide funds for leveraging purposes and to buy down the cost of individual measures that don't meet the required SIR of 1.0.**

Q&A

- What type of funding is not acceptable for use when buying down the cost of a measure?
 - **Only non-federal funds may be used to buy down the cost of a measure in order to meet SIR.**
- Is everything in place to report the MUD Expenditures in EARS?
 - **Not yet. CSD's IT department is working to provide a reporting format / mechanism to allow local agencies to report MUD expenditures in EARS through their local data systems (EPD, ServTraq Deluxe and self-reporting).**

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- **What can ACCES do to help?**
- ACCES can offer a variety of technical assistance and support services to agencies
- Develop a tool kit:
 - The tool kit can be personalized for specific geographic areas to include a list of HUD eligible buildings in your territory
 - Outlines a step by step process
 - Forms
- Host outreach / training workshops
- Remote and direct (on the ground) forms of technical assistance
 - Assist in having a building added to the HUD-DOE list
 - Help agency identify properties
 - Negotiate weatherization service agreements with property owners
 - Schedule TREAT audits

MUD SERVICE AGREEMENT

(Agency) agrees to install Weatherization measures at **no cost to the owner** for the following dwelling unit(s).

SECTION 1: Building Information

Building Name:	
Street Address:	Unit Number(s):
City/Zip:	
Building Phone:	Management Phone:
When is the best time to reach them? Morning _____ Afternoon _____ Evening _____	

SECTION 2: Must be completed by owner or owner's authorized agent (PLEASE PRINT).

When was the building built _____	Is this a master metered building: YES <input type="checkbox"/> NO <input type="checkbox"/>
Name of Site Owner or Site Owner's Authorized Agent:	
Name of Owner/Managing Company (if applicable):	
Mailing Address:	Number of units:
City/Zip:	
Home Phone:	Work or Daytime Phone:
Owner Signature:	Date:

By signing this form, the owner or owner's agent gives the Agency permission to enter the dwelling unit and to install Weatherization Services and possible additional measures to prevent the loss of heat and reduce the amount of energy consumption to the above-described unit, and agree to the following:

1. The owner or owner's agent shall not raise the rent of the unit or evict the unit's resident because of the increased value of the unit due solely to Weatherization measures, or other energy measure provided by the Agency.
2. The owner or owner's agent shall retain all applied measures in the residence where installed.
3. The owner authorizes the Agency access to utility company records to obtain only energy usage data for a period of one year before and one year after weatherization measures, or other energy measures are completed.
4. The owner shall provide the list of units with the income and energy cost (Utility Allowance) listed on the CSD 43 MFP intake form.
5. The owner shall provide access to 100% of the eligible units to provide the prescribed weatherization measures.

The Agency agrees to the following:

1. Shall be responsible for the cost of Weatherization measures, or other energy measures performed.
2. Shall ensure that the agency is insured and shall be responsible for damage to unit premises, furnishing, and/or resident(s) that is caused by Weatherization measures, or other energy measures.
3. Shall schedule Weatherization measures, or other energy measures at the convenience of all parties.
4. Shall provide Weatherization measures, or other energy measures only to tenants eligible under program requirements.
5. Shall assure that the owner, or owner's agent, and tenant data shall be maintained in a confidential manner to assure compliance with the Information Practices Act of 1977, as amended, and the Federal Privacy Act of 1974, as amended.
6. "AGENCY" shall design the weatherization based on the TREAT Audit as provided by designated auditor in accordance with good industry practices generally prevailing in the construction or Weatherization energy efficiency industry, and in accordance with all applicable laws, regulations and governmental permits, such that the WEATHERIZATION Measures will be soundly supported by the Site. If the design of the WEATHERIZATION Measures is not finalized and agreed to by "AGENCY" and the Site Owner as of the date of this Agreement, or "AGENCY" desires to modify the design of the WEATHERIZATION Measures after the date hereof, "AGENCY" shall provide drafts of the design of the WEATHERIZATION Measures, or drafts of any material modifications to the design of the WEATHERIZATION

Measures, to the Site Owner for review and acceptance. Site Owner's acceptance of the WEATHERIZATION Measures design shall not constitute an agreement of Site Owner that "AGENCY"'s construction, operation or maintenance of the Project is adequate or inadequate, nor shall Site Owner's acceptance of the WEATHERIZATION Measures design relieve "AGENCY" of any of its obligations under this Agreement.

7. Installation. "AGENCY" shall construct the WEATHERIZATION Measures in a good and workmanlike manner and in accordance with good industry practices generally prevailing in the Weatherization energy efficiency industry, and in accordance with all applicable laws, regulations and governmental permits. "AGENCY" shall be responsible for and indemnify and hold Site Owner harmless from all damage to the Site as a result of the installation and construction of the WEATHERIZATION Measures by "AGENCY" or its Agencies or subAgencies. At Site Owner's request, "AGENCY" or its Agencies or subAgencies shall promptly repair all such damage. "AGENCY" shall ensure that all buildings, including, the roofs of such buildings, on which any part of the WEATHERIZATION Measures may be mounted or installed shall be kept watertight and free from damage. Prior to commencing any construction activities, "AGENCY" will deliver to Site Owner certificates of insurance for itself and its Agencies reflecting all insurance to be maintained by "AGENCY" (as lessee) and "AGENCY"'s Agencies under the Site Lease. "AGENCY" shall keep the Site free and clear of any mechanics' liens or similar encumbrances in connection with the installation, construction, operation and maintenance of the WEATHERIZATION Measures, and shall give Site Owner regular updates regarding the progress of construction and the anticipated Commercial Operation Date. "AGENCY" shall bear all risk of loss with respect to the WEATHERIZATION Measures, except for losses arising from willful acts or omissions or negligence by Site Owner or its agents or employees.

8.

Agency Name:	
Street Address:	
City/Zip	
Agency Phone:	Contact Phone:
Authorized Agency Representative Signature:	Print Name and Title:

DOE/ARRA Multi-Family Weatherization

Contact Information:

- **ACCES**

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